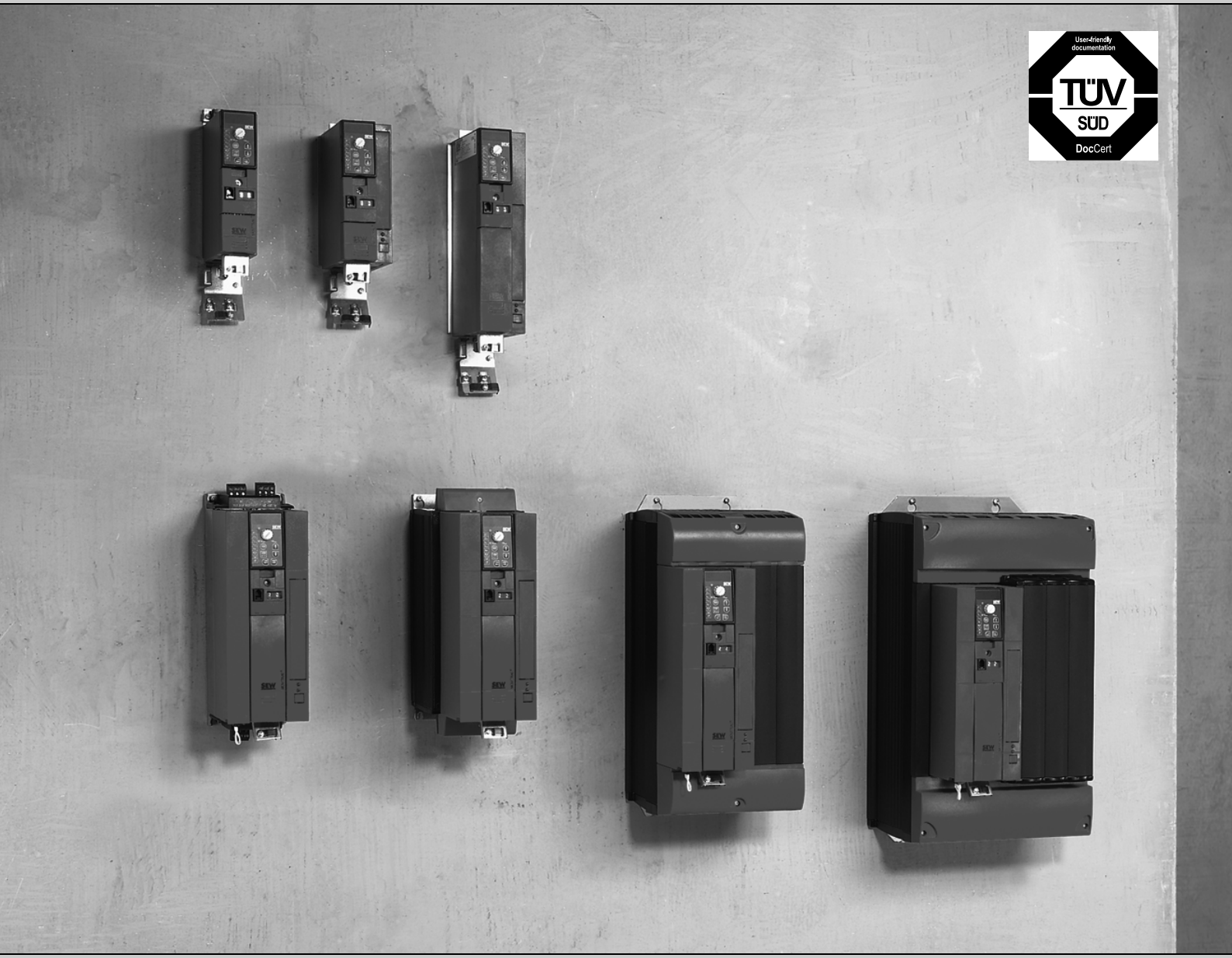
SEW EURODRIVE

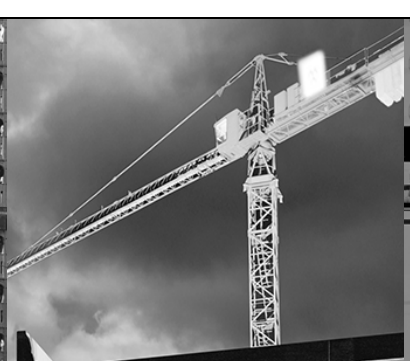
Compact Operating Instructions



MOVITRAC® B

Edition 10/2011

19363613 / EN



KKFU 144794 3
42G1

Contents

1 General Information 4
1.1 Scope of this documentation 4
1.2 Structure of the safety notes 4
2 Safety Notes 6
2.1 Preliminary information 6
2.2 General information 6
2.3 Target group 7
2.4 Designated use 7
2.5 Applicable documentation 8
2.6 Transport / storage 8
2.7 Installation 9
2.8 Electrical connection 9
2.9 Safe disconnection 9
2.10 Operation 10
2.11 Unit temperature 10
3 Unit Designation / Nameplate 11
3.1 Type designation 11
3.2 Nameplate 12
4 Installation 13
4.1 Wiring diagram 14
5 Startup 15
5.1 Startup with factory setting – brief description 15
5.2 Manual operation with FBG11B speed control module 16
5.3 Startup using the FBG11B keypad 17
5.4 Parameter list 20
6 Operation 31
6.1 Return codes (r-19 – r-38) 31
6.2 Status displays 32
7 Service / List of Errors 34
7.1 Error list (F-00 – F113) 34
7.2 SEW electronics service 38
Index 39

1 General Information

1.1 Scope of this documentation

This documentation comprises the general safety notes and a selected information regarding the device.

- Please note that this documentation does not replace the detailed operating instructions.
- Read the detailed operating instructions before you start working with the device.
- Observe the information, instructions and notes in the detailed operating instructions. This is essential for fault-free operation of the unit and fulfillment of any rights to claim under warranty.
- The enclosed CD or DVD contains PDF files of the additional operating instructions as well as further documentation regarding the device.
- All technical documentation from SEW-EURODRIVE is available as individual PDF files via the SEW-EURODRIVE website: www.sew-eurodrive.de

1.2 Structure of the safety notes

1.2.1 Meaning of the signal words

The following table shows the grading and meaning of the signal words for safety notes, notes on potential risks of damage to property, and other notes.

Signal word	Meaning	Consequences if disregarded
⚠ **DANGER**	Imminent danger	Severe or fatal injuries
⚠ **WARNING**	Possible dangerous situation	Severe or fatal injuries
⚠ **CAUTION**	Possible dangerous situation	Minor injuries
NOTICE	Possible damage to property	Damage to the drive system or its environment
INFORMATION	Useful information or tip: Simplifies the handling of the drive system.	–

1.2.2 Structure of the section-related safety notes

Section-related safety notes do not apply to a specific action, but to several actions pertaining to one subject. The used symbols indicate either a general or a specific hazard.

This is the formal structure of a section-related safety note:

⚠ SIGNAL WORD

Type and source of danger.

Possible consequence(s) if disregarded.

- Measure(s) to prevent the danger.

1.2.3 Structure of the embedded safety notes

Embedded safety notes are directly integrated in the instructions just before the description of the dangerous action.

This is the formal structure of an embedded safety note:

- ⚠ **SIGNAL WORD** Nature and source of hazard.

  Possible consequence(s) if disregarded.

  – Measure(s) to prevent the danger.

2 Safety Notes

The following basic safety notes must be read carefully to prevent injury to persons and damage to property. The operator must ensure that the basic safety notes are read and adhered to. Make sure that persons responsible for the plant and its operation, as well as persons who work independently on the unit, have read through the operating instructions carefully and understood them. If you are unclear about any of the information in this documentation, or if you require further information, please contact SEW-EURODRIVE.

2.1 Preliminary information

The following safety notes predominantly refer to the use of frequency inverters. Additionally, when using drives with motors or gearmotors, observe the corresponding safety notes in the respective operating instructions.

Please also observe the supplementary safety notes in the individual sections of this publication.

2.2 General information

During operation, frequency inverters can have live, bare parts according to their degree of protection.

Severe or fatal injuries.

- All work related to transportation, storage, setup/mounting, connection, startup, maintenance and repair may only be carried out by qualified personnel, in strict observance of:
  - The relevant detailed operating instructions
  - The warning and safety signs on the motor/gearmotor
  - All other project planning documents, operating instructions and wiring diagrams related to the drive
  - The specific regulations and requirements for the system
  - The national/regional regulations governing safety and the prevention of accidents
- Never install damaged products.
- Submit a complaint to the shipping company immediately in the event of damage.

Removing covers without authorization, improper use as well as incorrect installation or operation may result in severe injuries to persons or damage to property.

This document provides further information.

2.3 Target group

Any mechanical work may only be performed by adequately qualified personnel. Qualified personnel in this context are persons who are familiar with the setup, mechanical installation, trouble shooting and maintenance for this product. Further, they are qualified as follows:

- Training in mechanical engineering, e.g. as a mechanic or mechatronics technician (final examinations must have been passed).
- They are familiar with these operating instructions.

Any electronic work may only be performed by adequately qualified electricians. Qualified electricians in this context are persons who are familiar with the electronic installation, startup, trouble shooting and maintenance for this product. Further, they are qualified as follows:

- Training in electrical engineering, e.g. as an electrician or mechatronics technician (final examinations must have been passed).
- They are familiar with these operating instructions.

All work in further areas of transportation, storage, operation and waste disposal must only be carried out by persons who are trained appropriately.

2.4 Designated use

Frequency inverters are components for controlling asynchronous AC motors. Frequency inverters are components intended for installation in electrical systems or machines. Never connect capacitive loads. Operation with capacitive loads results in overvoltages and may destroy the unit.

The following standards apply if the frequency inverters are marketed in the EU/EFTA:

- In case of installation in machines, startup of the drive inverters (meaning the start of proper use) is prohibited until it is determined that the machine meets the requirements stipulated in Directive 2006/42/EC (machine directive); observe EN 60204.
- Startup (i.e. the start of designated use) is only permitted under observance of the EMC (2004/108/EC) directive.
- The frequency inverters comply with the requirements of the Low Voltage Directive 2006/95/EC. The harmonized standards of the EN 61800-5-1/DIN VDE T105 series in connection with EN 60439-1/VDE 0660 part 500 and EN 60146/VDE 0558 are applied to these frequency inverters.

Observe the technical data and the connection requirements specified on the nameplate and the operating instructions.

2.4.1 Safety functions

Frequency inverters from SEW-EURODRIVE must not perform any safety functions unless the inverters are subordinate to other safety systems.

Use higher-level safety systems to ensure protection of equipment and personnel.

When using the "Safe stop" function, you must observe the following publications:

- MOVITRAC® B / functional safety

This documentation is available via "Documentation \ Software \ CAD" on the **SEW-EURODRIVE web site**.

2.4.2 Content of this publication

This publication contains conditions and amendments related to MOVITRAC® B in safety-oriented applications.

The system comprises a frequency inverter with asynchronous motor and safety-tested external disconnecting device.

2.5 Applicable documentation

This document supplements the MOVITRAC® B operating instructions and limits the application notes according to the following information.

It can only be used in conjunction with the following publications:

- MOVITRAC® B compact operating instructions
- MOVITRAC® B communication manual
- The respective manual of the used option card

2.6 Transport / storage

Inspect the shipment for any damage that may have occurred in transit as soon as you receive the delivery. Inform the shipping company immediately. It may be necessary to preclude startup. Observe the climate conditions according to chapter "General technical data".

2.7 Installation

The units must be installed and cooled according to the regulations and specifications in this documentation.

Protect the frequency inverters from excessive strain. Do not twist any components and do not modify the insulation spaces. Do not touch any electronic components or contacts.

Frequency inverters contain components that can easily be damaged by electrostatic energy and improper handling. Electric components must not be mechanically damaged or destroyed.

The following applications are prohibited unless the unit is explicitly designed for such use:

- Use in potentially explosive atmospheres.
- Use in areas exposed to harmful oils, acids, gases, vapors, dust, radiation, etc. (frequency inverter may only be operated in climate class 3K3 to EN 60721-3-3)
- Use in non-stationary applications which are subject to mechanical vibration and impact loads in excess of the requirements in EN 61800-5-1.

2.8 Electrical connection

Observe the applicable national accident prevention guidelines when working on live frequency inverters (e.g. BGV A3 for Germany).

During installation, observe the specifications regarding cable cross sections, fusing and protective conductor connection. This publication contains additional information.

In this documentation, you will find notes on EMC-compliant installation, such as shielding, grounding, arrangement of filters and routing of lines. The manufacturer of the system or machine is responsible for maintaining the limits established by EMC legislation.

Protective measures and protection devices must comply with the regulations in force (e.g. EN 60204 or EN 61800-5-1).

Ground the unit.

2.9 Safe disconnection

The unit meets all requirements for safe disconnection of power and electronic connections in accordance with EN 61800-5-1. All connected circuits must also satisfy the requirements for safe disconnection.

2.10 Operation

Systems with integrated frequency inverters must be equipped with additional monitoring and protection devices, as applicable, according to the relevant safety guidelines and regulations, such as legislation governing technical equipment, accident prevention regulations, etc.

Do not touch live components or power connections until 10 minutes after disconnecting the frequency inverters from the supply voltage because there may still be some charged capacitors. Observe the corresponding labels on the frequency inverter.

Keep all covers and housings closed during operation.

The fact that the status LED and other display elements are no longer illuminated does not indicate that the unit has been disconnected from the supply system and no longer carries any voltage.

Mechanical blocking or safety functions inside the unit may cause a motor standstill. Eliminating the cause of the problem or performing a reset may an automatic restart. If, for safety reasons, this is not permitted for the driven machine, disconnect the unit from the supply system before correcting the error.

2.11 Unit temperature

MOVITRAC® B frequency inverters are usually operated with braking resistors. The braking resistors are usually installed on the control cabinet.

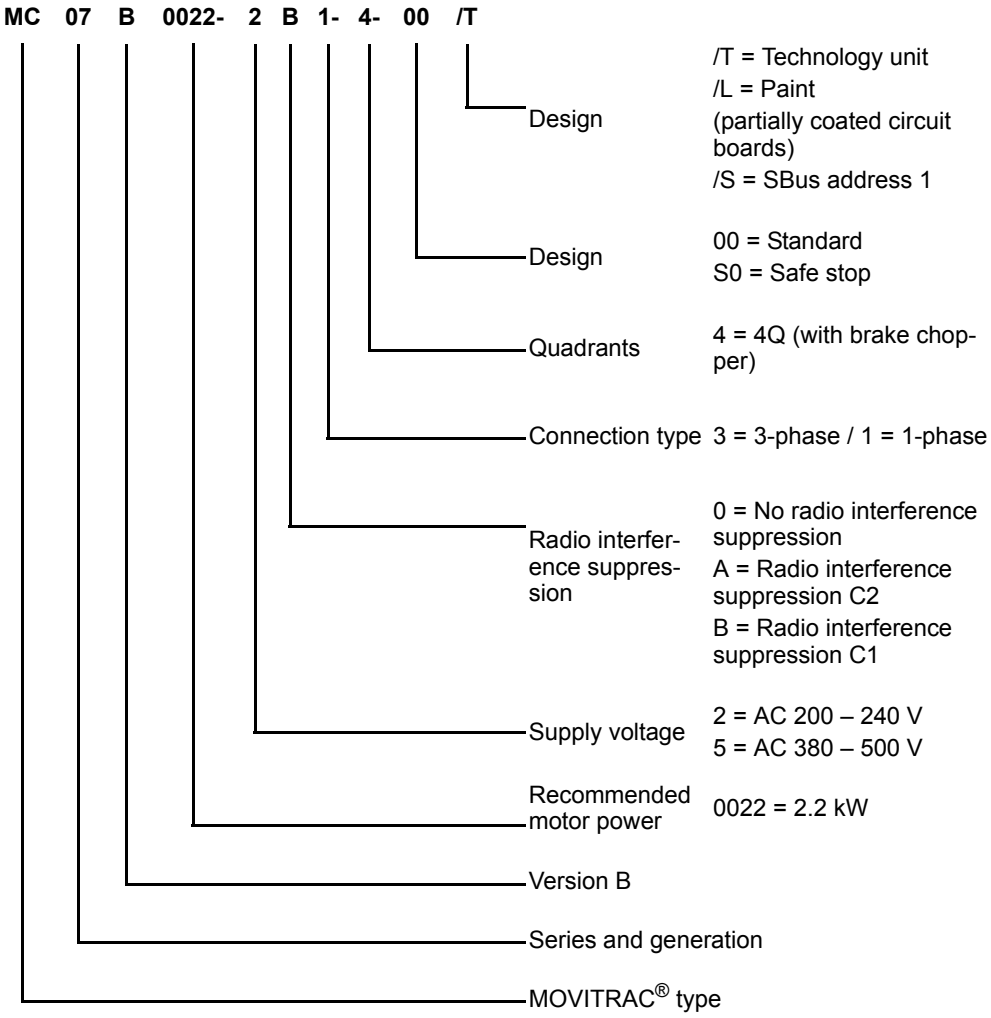
The braking resistors can reach a surface temperature of significantly more than 70 °C.

Never touch the braking resistors during operation or in the cool-down phase once the unit has been switched off.

3 Unit Designation / Nameplate

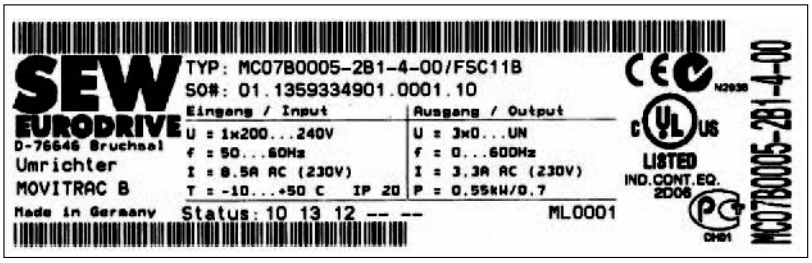
3.1 Type designation

The following diagram shows a type designation:


MC 07 B 0022- 2 B 1- 4- 00 /T
Design
/T = Technology unit
/L = Paint
(partially coated circuit boards)
/S = SBus address 1
Design
00 = Standard
S0 = Safe stop
Quadrants
4 = 4Q (with brake chopper)
Connection type
3 = 3-phase / 1 = 1-phase
Radio interference suppression
0 = No radio interference suppression
A = Radio interference suppression C2
B = Radio interference suppression C1
Supply voltage
2 = AC 200 – 240 V
5 = AC 380 – 500 V
Recommended motor power
0022 = 2.2 kW
Version B
Series and generation
MOVITRAC® type

3.2 Nameplate

The following figure shows a nameplate:



3185547659

Input	U	Rated line voltage
	I	Rated line current, 100% operation
	f	Nominal line frequency
Output	U	Output voltage 100% operation
	I	Nominal output current 100% operation
	f	Output frequency
T		Ambient temperature
P motor		Recommended motor power 100% operation

The unit status is indicated above the lower barcode. It documents the hardware and software states of the unit.

4 Installation

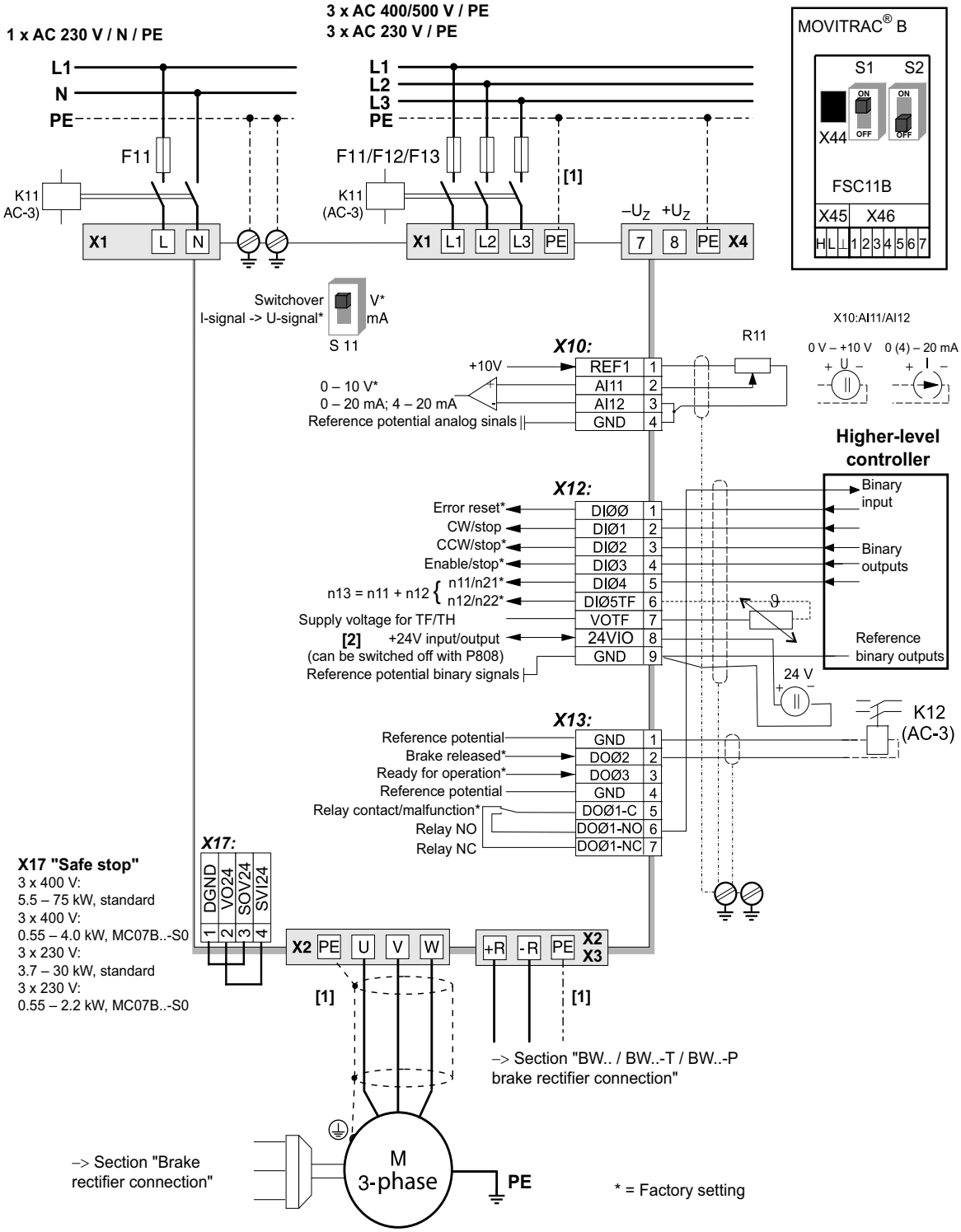
DANGER

The surface temperatures of the heat sinks can exceed 70 °C.

Danger of burns.

- Do not touch the heat sink.

4.1 Wiring diagram



[1] In sizes 1, 2S, and 2, there is no PE connection next to the power supply connection terminals and motor connection terminals [X1]/[X2]. Use the PE terminal next to the DC link connection [X4] (only size 1 – 5). For size 0, the plate is the PE connection.

[2] The MC07B..-S0 unit type must always be supplied with external voltage.

X4 is only available in sizes 1 – 5. From size 3 onwards, there are two additional PE terminals.

5 Startup

5.1 Startup with factory setting – brief description

You can directly connect the MOVITRAC® B frequency motor to a motor with the same power rating. For example: A 1.5 kW (2.0 HP) motor can be connected directly to a MC07B0015.

5.1.1 Procedure

1. Connect the motor to MOVITRAC® B (terminal X2).
2. You have the option of connecting a braking resistor (terminal X2/X3).
3. The following signal terminals must be controlled with your control system:
   - Enable DIØ3
   - As required: CW/STOP DIØ1 or CCW/STOP DIØ2
   - Setpoint:
     - Analog input (X10) and/or
     - DIØ4 = n11 = 150 rpm and/or
     - DIØ5 = n12 = 750 rpm and/or
     - DIØ4 + DIØ5 = n13 = 1500 rpm
   - For brakemotors:

     DOØ2 = brake control via brake rectifiers
4. You have the option of connecting the following signal terminals:
   - DIØØ = error reset
   - DOØ1 = /malfunction (designed as a relay contact)
   - DOØ3 = ready
5. Check the controller for the required functionality.
6. Connect the frequency inverter to the mains (X1).

5.1.2 Notes

Signal terminal functions and setpoint settings can be modified using the FBG11B keypad or a PC. A PC connection requires the FSC11B front option or one of the following interface adapters: UWS21B / UWS11A / USB11A.

5.2 Manual operation with FBG11B speed control module

FBG11B speed control module of the keypad (local manual operation): LED flashes.

The only relevant parameters in "FBG speed control module" operating mode are:

- *P122 Direction of rotation FBG manual operation*
- RUN key and STOP/RESET key
- Speed control module (potentiometer)

When the FBG speed control module is activated, the symbol flashes.

You limit the smallest speed with *P301 Minimum speed* and the largest speed with the n_{max} symbol.

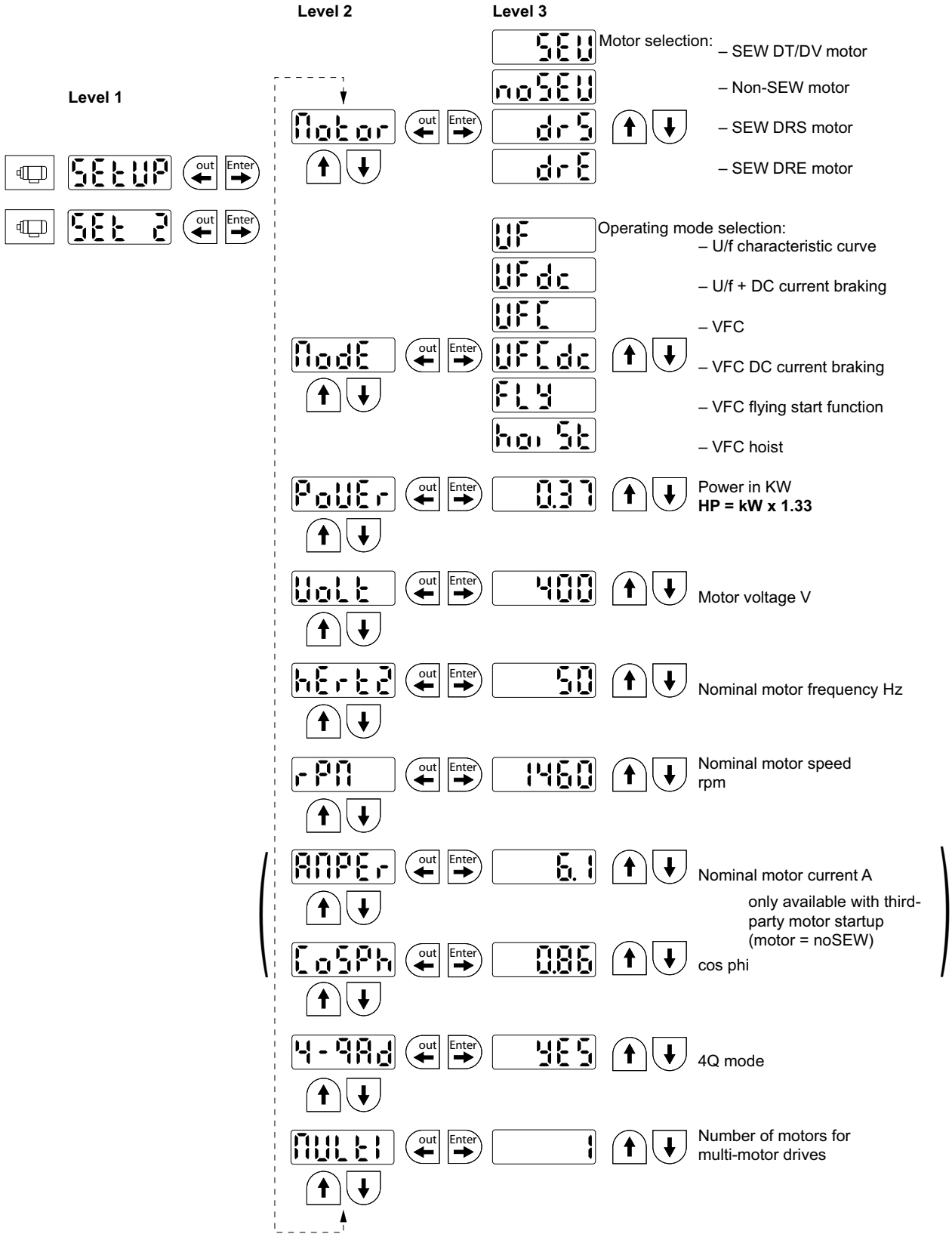
After an error, a reset can be performed using the STOP/RESET button via the terminal or the interface. After a reset, the "manual setpoint generator" operating mode will be active again. The drive remains stopped.

The `Stop` display flashes to indicate that you have to re-enable the drive via the RUN button.

The parameter *P760 Locking RUN/STOP keys* does not have any effect in "manual speed control module" operating mode.

Removing the FBG11B keypad will trigger a stop response.

5.3 Startup using the FBG11B keypad



27021597782442891

5.3.1 Required data

The following data is required to ensure startup is successful:

- Motor type (SEW or non-SEW motor)
- Motor data
  - Rated voltage and rated frequency
  - Additionally for non-SEW motors: Nominal current, nominal power, power factor cos ϕ, and nominal speed.
- Rated line voltage

5.3.2 Activating startup

Requirements:

- Drive "no enable": `Stop`

If a smaller or a larger motor is connected (maximum difference one size), then you have to choose the value closest to the rated motor power.

The startup procedure is not complete until you have returned to the main menu level by pressing the OUT button.

You can then perform startup only with motor parameter set 1.

INFORMATION

The SEW motor startup is designed for 4-pole motors. It may be useful to start up 2-pole or 6-pole SEW motors as non-SEW motors.

5.3.3 Operating mode V/f

The default setting for the operating mode is V/f. Use this operating mode if you have no particular speed quality requirements and for applications that require a maximum output frequency > 150 Hz.

5.3.4 Operating mode VFC

Start up the inverter in VFC or VFC & DC brake operating mode for the following requirements:

- High torque
- Continuous duty at low frequencies
- Accurate slip compensation
- More dynamic behavior

For this purpose, you will have to choose the VFC or VFC & DC brake operating modes from *P01* at startup.

5.3.5 Multi-motor drive startup

Multi-motor drives are mechanically coupled to each other (e.g. chain drive with multiple motors).

Observe the notes in the "MOVIDRIVE® Multi-Motor Drives" manual.

5.3.6 Group drive startup

Group drives are mechanically decoupled from each other (e.g. different conveyor belts). In this operating mode, the inverter operates without slip compensation and with a constant V/f ratio.

Observe the notes in the "MOVIDRIVE® Multi-Motor Drives" manual.

5.3.7 Startup with large load mass moment of inertia, such as with pumps and fans

The slip compensation is designed for a load mass moment of inertia to motor moment of inertia ratio smaller than 10. If the ratio is larger and the drive vibrates, then slip compensation must be reduced and even be set to 0 if necessary.

5.4 Parameter list

All parameters that can also be displayed and edited using the keypad are indicated as follows in the "FBG" (keypad) column:

Selection in the long menu (*P800* = long)

Selection in the short or long menu (*P800* = short)

Display in the pictogram menu in the FBG11B keypad

Selection within FGB motor startup

If there are several options, the factory setting is <u>underlined</u>.

No.	FBG	Index dec.	Name	Range / factory setting	
				Display	MOVITOOLS® MotionStudio
0..	**Display values** (read only)				
00.			**Process values**		
000		8318	Speed (signed)		rpm
001		8501	User display for DBG11B		Text
002		8319	Frequency (signed)		Hz
004		8321	Output current (absolute value)		% I_N
005		8322	Active current (signed)		% I_N
008		8325	DC link voltage		V
009		8326	Output current		A
01.	**Status displays**				
010		8310	Inverter state		Text
011		8310	Operating state		Text
012		8310	Error status		Text
013		8310	Current parameter set		Current parameter set
014		8327	Heat sink temperature		°C
02.	**Analog setpoints**				
020		8331	Analog input AI1		V
021		8332	Analog input AI2 (optional)		V
03.	**Binary inputs** (see parameter *P60.*)				
030		8844	Binary input DI00		<u>Error reset</u>
031		8335	Binary input DI01		CW / STOP (fixed assignment)
032		8336	Binary input DI02		<u>CCW/stop</u>
033		8337	Binary input DI03		<u>Enable/stop</u>
034		8338	Binary input DI04		<u>n11/n21</u>
035		8339	Binary input DI05		<u>n12/n22</u>

No.	FBG	Index dec.	Name	Range / factory setting	
				Display	MOVITOOLS® MotionStudio
039	Lon6	8334	Binary inputs DI00 – DI05		Collective display of binary inputs
04.	**Binary inputs option** (see parameter *P60.*)				
040			Binary input DI10		No function
041			Binary input DI11		No function
042			Binary input DI12		No function
043			Binary input DI13		No function
044			Binary input DI14		No function
045			Binary input DI15		No function
046			Binary input DI16		No function
048	Lon6	8348	Binary inputs DI10 – DI15		Collective display of binary inputs
05.	**Binary outputs** (see parameter *P62.*)				
051		8349	Binary output DO01		/Fault
052		8349	Binary output DO02		Brake released
053		8349	Binary output DO03		Ready
059	Lon6	8349	Binary outputs DO01 – DO03		Collective display of binary outputs
07.	**Unit data**				
070		8301	Unit type		Text
071		8361	Nominal output current		A
073		8362	Front module		
073		8364	Firmware front module		
076		8300	Basic unit firmware		Part number and version
077		–	DBG firmware		Only in DBG60B
08.	**Error memory**				
080 – 084	Lon6	8366 – 8370	Error t-0 – t-4	Error code	Background information for previous errors.

No.	FBG	Index dec.	Name	Range / factory setting	
				Display	MOVITOOLS® MotionStudio
09.	**Bus diagnostics**				
090		8451	PD configuration		
091		8452	Fieldbus type		
092		8453	Fieldbus baud rate		
093		8454	Fieldbus address		
094		8455	PO 1 setpoint		hex
095		8456	PO 2 setpoint		hex
096	Long	8457	PO 3 setpoint		hex
097		8458	PI 1 actual value		hex
098		8459	PI 2 actual value		hex
099		8460	PI 3 actual value		hex
–		10497.1	Bus status		
		10497.3	Device identification		
1..	**Setpoints / ramp generators** (on FBG only parameter set 1)				
10.	**Setpoint selection / frequency input**				
100		8461	Setpoint source	0 1 2 4 6 7 8 9 10 11 14	Bipolar / fixed setpoint Unipolar / fixed setpoint RS485/fixed setpoint Motor potentiometer / fixed setpoint Fixed setpoint + AI1 Fixed setpoint* + AI1 MASTER SBus1 MASTER RS485: SBus 1/fixed setpoint Frequency setpoint input/fixed setpoint Bipolar AI2 / Fixed setpoint
101	Short	8462	Control signal source	0 1 3 4	Terminals RS485 SBus 1 3-wire control
102		8840	Frequency scaling	0.1 – 10 – 120.00 kHz	
103		10247.15	FI1 reference	0 1	n_{max} $n_{reference}$
104		10247.10	Setpoint reference speed $n_{reference}$	0 – 3000 – 6000 rpm	
105		10416.1	Wire breakage detection	0 2 4 7	No response Immediate stop/malfunction Rapid stop/malfunction Rapid stop/warning
106		10247.11	FI1 char. curve x1	0 – 100 %	
107		10247.12	FI1 char. curve y1	–100 % – 0 – +100 %	
108	Long	10247.13	FI1 char. curve x2	0 – 100 %	
109		10247.14	FI1 char. curve y2	–100 % – 0 – +100 %	

No.	FBG	Index dec.	Name	Range / factory setting	
				Display	MOVITOOLS® MotionStudio
11.	**Analog input 1 (0 – 10 V)**				
112	Short	8465	AI1 operating mode	1 5 6 7 8 9	10 V, reference potential maximum speed 0 – 20 mA, reference maximum speed 4 – 20 mA, reference maximum speed 0 – 10 V, n-reference 0 – 20 mA, n-reference 4 – 20 mA, n-reference
116		10247.6	AI1 char. curve x1	0 – 100 %	
117		10247.7	AI1 char. curve y1	–100 % – 0 – +100 %	
118		10247.8	AI1 char. curve x2	0 – 100 %	
119		10247.9	AI1 char. curve y2	–100 % – 0 – +100 %	
12.	**Analog input AI2 / FBG speed control module (option)**				
120		8469	AI2 operating mode	0 1 2	No function 0 – ±10 V + setpoint 0 – 10 V current limit
121	tonb	8811	Addition FBG speed control module	0 1 2	Off On On (without fixed setpoint)
122		8799	Direction of rotation FBG manual operation	0 1 2	Unipolar CW Unipolar CCW Bipolar CW and CCW
126		10247.1	AI2 char. curve x1	–100 % – 0 – +100 % (–10 V – 0 – +10 V)	
127	tonb	10247.2	AI2 char. curve y1	–100 % – 0 – +100 % ($-n_{max}$ – 0 – $+n_{max}$ / 0 – I_{max})	
128		10247.3	AI2 char. curve x2	–100 % – 0 – +100% (–10 V – 0 – +10 V)	
129		10247.4	AI2 char. curve y2	–100 % – 0 – +100% ($-n_{max}$ – 0 – $+n_{max}$ / 0 – I_{max})	
13. / 14.	**Speed ramps 1 / 2**				
130 / 140		8807 / 9264	Ramp t11/t21 up	0.1 – 2 – 2000 s	
131 / 141		8808 / 9265	Ramp t11 / t21 down	0.1 – 2 – 2000 s	
134 / 144		8474 / 8482	Ramp t12 / t22	0.1 – 10 – 2000 s	
135 / 145	tonb	8475 / 8483	S pattern t12 / t22	0 1 2 3	Off Weak Medium Strong
136 / 146		8476 / 8484	Stop ramp t13 / t23	0.1 – 2 – 20 s	
139 / 149		8928 / 8929	Ramp monitoring 1 / 2	0 1	YES NO
15.	**Motor potentiometer**				
150		8809	Ramp t3 up = down	0.2 – 20 – 50 s	
152	tonb	8488	Save last setpoint	oFF on	Off On

No.	FBG	Index dec.	Name	Range / factory setting	
				Display	MOVITOOLS® MotionStudio
16. / 17.	**Fixed setpoints**				
160 / 170		8489 / 8492	Internal setpoint n11 / n21	0 – <u>150</u> – 5000 rpm	
161 / 171		8490 / 8493	Internal setpoint n12 / n22	0 – <u>750</u> – 5000 rpm	
162 / 172		8491 / 8494	Internal setpoint n13 / n23	0 – <u>1500</u> – 5000 rpm	
163 / 173		8814 / 8817	n11/n21 PI controller	0 – <u>3</u> – 100 %	
164 / 174		8815 / 8818	n12/n22 PI controller	0 – <u>15</u> – 100 %	
165 / 175		8816 / 8819	n13/n23 PI controller	0 – <u>30</u> – 100 %	
2..	**Controller parameters**				
25.	**PI controller**				
250		8800	PI controller	<u>0</u> 1 2	<u>Off</u> Normal Inverted
251		8801	PI gain	0 – <u>1</u> – 64	
252		8802	I component	0 – <u>1</u> – 2000 s	
3..	**Motor parameters** (on FBG only parameter set 1)				
30. / 31.			**Limits 1 / 2**		
300 / 310		8515 / 8519	Start/stop speed 1 / 2	0 – 150 rpm	
301 / 311		8516 / 8520	Minimum speed 1 /2	0 – <u>15</u> – 5500 rpm	
302 / 312		8517 / 8521	Maximum speed 1 / 2	0 – <u>1500</u> – 5500 rpm	
303 / 313		8518 / 8522	Current limit 1 / 2	0 – <u>150</u> % I_N	
32. / 33.	**Motor adjustment 1 / 2**				
320 / 330		8523 / 8528	Automatic adjustment 1/2	oFF <u>on</u>	Off <u>On</u>
321 / 331		8524 / 8529	Boost 1/2	0 – 100 %	
322 / 332		8525 / 8530	IxR compensation 1/2	0 – 100 %	
323 / 333		8526 / 8531	Premagnetization time 1 / 2	0 – 2 s	
324 / 334		8527 / 8532	Slip compensation 1 / 2	0 – 500 rpm	
34.	**I_N UL monitoring**				
340		8533	Motor protection 1	<u>OFF</u> / ON ASYNCHRONOUS / ON SERVO	
341		8534	Cooling type 1	<u>FAN COOLED</u> / FORCED COOLING	
342		8535	Motor protection 2	<u>OFF</u> / ON ASYNCHRONOUS / ON SERVO	
343		8536	Cooling type 2	<u>FAN COOLED</u> / FORCED COOLING	
345 / 346		9114 / 9115	I_N UL monitoring 1 / 2	0.1 – 500 A	

No.	FBG	Index dec.	Name	Range / factory setting	
				Display	MOVITOOLS® MotionStudio
4..	**Reference messages**				
40.	**Speed reference signal**				
400		8539	Speed reference value	0 – <u>750</u> – 5000 rpm	
401		8540	Hysteresis	0 – <u>100</u> – +500 rpm	
402	Long	8541	Deceleration time	0 – <u>1</u> – 9 s	
403		8542	Message = "1" if:	<u>0</u> 1	$n < n_{ref}$ $n > n_{ref}$
43.	**Current reference signal**				
430		8550	Current reference value	0 – <u>100</u> – 150 % I_N	
431		8551	Hysteresis	0 – <u>5</u> – 30 % I_N	
432	Long	8552	Deceleration time	0 – <u>1</u> – 9 s	
433		8553	Signal = "1" when	<u>0</u> 1	<u>$I < I_{ref}$</u> $I > I_{ref}$
44.	**I_{max} signal**				
440		8554	Hysteresis	0 – <u>5</u> – 50 % I_N	
441		8555	Deceleration time	0 – <u>1</u> – 9 s	
442	Long	8556	Signal = "1" when	<u>0</u> 1	<u>$I < I_{max}$</u> $I > I_{max}$
45.	**PI controller reference message**				
450		8813	PI actual value reference	<u>0.0</u> – 100.0 %	
451	Long	8796	Message = "1" if:	0 <u>1</u>	PI Actual value < PI ref <u>PI Actual value > PI ref</u>
5..	**Control functions** (on FBG only parameter set 1)				
50.	**Speed monitoring 1 / 2**				
500 / 502		8557 / 8559	Speed monitoring 1 / 2	<u>0</u> 3	<u>Off</u> Motor/regenerative
501 / 503	Long	8558 / 8560	Delay time 1/2	0 – <u>1</u> – 10 s	
54.	**Gear unit/motor monitoring**				
540		9284	Response to drive vibration/warning	<u>1</u>	<u>Display error</u>
541		9285	Response to drive vibration/error	<u>7</u>	<u>Rapid stop/warning</u>
542		9286	Response to oil aging/error	<u>1</u>	<u>Display error</u>
543	Long	9287	Response to oil aging/warning	<u>1</u>	<u>Display error</u>
544		9288	Oil aging / overtemperature	<u>1</u>	<u>Display error</u>
545		9289	Oil aging / ready signal	<u>1</u>	<u>Display error</u>
549		9290	Response to brake wear	<u>1</u>	<u>Display error</u>

No.	FBG	Index dec.	Name	Range / factory setting	
				Display	MOVITOOLS® MotionStudio
56.	**Ex-e motor current limitation**				
560		9293	Ex-e motor current limit		ON / <u>OFF</u>
561		9294	Frequency A		0 – <u>5</u> – 60 Hz
562		9295	Current limit A		0 – <u>50</u> – 150 %
563		9296	Frequency B		0 – <u>10</u> – 104 Hz
564		9297	Current limit B		0 – <u>80</u> – 200 %
565		9298	Frequency C		0 – <u>25</u> – 104 Hz
566		9299	Current limit C		0 – <u>100</u> – 200 %
567		10247.20	Frequency D		0 – <u>50</u> – 104 Hz
568		10247.21	Current limit D		0 – <u>100</u> – 200 %
57.	Motor protection				
570		10247.22	Frequency E		0 – <u>87</u> – 104 Hz
571		10247.23	Current limit E		0 – <u>100</u> – 200 %
6..	**Terminal assignment**				
60.	**Binary inputs**				
601		8336	Binary input DI02 assignment	0:	No function
602		8337	Binary input DI03 assignment	1:	Enable / stop (factory setting DI03)
603	Short	8338	Binary input DI04 assignment	2:	CW/stop
604		8339	Binary input DI05 assignment	3:	CCW / stop (factory setting DI02)
608		8844	Binary input DI00 assignment	4:	n11/n21 (factory setting DI04)
61.			**Binary inputs option**	5:	n12/n22 (factory setting DI05) n13 = n11 + n12
610		8340	Binary input DI10 assignment	6:	Changing the fixed setpoint
611		8341	Binary input DI11 assignment	7:	Parameter set switchover
612	Short	8342	Binary input DI12 assignment	8:	Ramp switchover
613		8343	Binary input DI13 assignment	9:	Motor potentiometer up
614		8344	Binary input DI14 assignment	10:	Motor potentiometer down
615		8345	Binary input DI15 assignment	11:	/External error
616		8346	Binary input DI16 assignment	12:	Error reset (factory setting DI00)
				19:	Slave free running
				20:	Setpoint acceptance active
				26:	TF signal (only with DI05)
				27:	Vibration/warning
				28:	Vibration/error
				29:	Brake wear
				30:	Controller inhibit
				33:	Oil aging/warning
				34:	Oil aging/error
				35:	Oil aging / overtemperature
				36:	Oil aging/ready

No.	FBG	Index dec.	Name	Range / factory setting	
				Display	MOVITOOLS® MotionStudio
62.	**Binary outputs**				
620	Short	8350	Binary output DO01 assignment	0 1 2 3 4 5 8 9 11 12 13 21 22 23 24 27 30 31	No function /Malfunction (factory setting DO01) Ready (factory setting DO03) Output stage ON Rotating field ON Brake released (factory setting DO02 / Not with DO03) Parameter set Speed reference signal Setpoint-actual value comparison signal Current reference message Imax signal IPOS output /IPOS fault PI controller actual value reference Ex-e current limit active Safe stop Ixt warning Ixt fault
621		8351	Binary output DO02 assignment		
622		8916	Binary output DO03 assignment		
64.	**Analog outputs AO1** (optional)				
640	Long	8568	AO1 analog output	0 1 2 3 4 5 6 7 11 12	No function Ramp generator input Setpoint speed Actual speed Actual frequency Output current Active current Unit utilization Actual speed (signed) Actual frequency (signed)
641		10248.5	AO1 reference	0 1 2	3000 rpm, 100 Hz, 150% n_{max} $n_{set\ reference}$
642		8570	AO1 Operating mode	0 2 3 4	No function 0 – 20 mA 4 – 20 mA 0 – 10 V
646	Long	10246.1	AO1 char. curve x1	–100 % – 0 – +100 %	
647		10246.2	AO1 char. curve y1	–100 – 100 %	
648		10246.3	AO1 char. curve x2	–100 % – 0 – +100 %	
649		10246.4	AO1 char. curve y2	–100 – 100 %	
7..	**Control functions** (on FBG only parameter set 1)				
70.			**Operating modes 1 / 2**		
700 / 701		8574 / 8575	Operating mode 1 / 2	0 2 3 4 21 22	VFC VFC & Hoist VFC & DC braking VFC & flying start function V/f characteristic curve V/f & DC braking

No.	FBG	Index dec.	Name	Range / factory setting	
				Display	MOVITOOLS® MotionStudio
71.	**Standstill current 1 / 2**				
710 / 711	Lon6	8576 / 8577	Standstill current 1 / 2	0 – 50% I_{Mot}	
72.	**Setpoint stop function 1 / 2**				
720 / 723		8578 / 8581	Setpoint stop function 1 / 2	oFF on	Off On
721 / 724	Lon6	8579 / 8582	Stop setpoint 1 / 2	0 – 30 – 500 rpm	
722 / 725		8580 / 8583	Start offset 1 / 2	0 – 30 – 500 rpm	
73.	**Brake function 1 / 2**				
731 / 734		8749 / 8750	Brake release time 1 / 2	0 – 2 s	
732 / 735	Lon6	8585 / 8587	Brake application time 1 / 2	0 – 2 s	
74.	**Speed skip function**				
740 / 742		8588 / 8590	skip window center 1 / 2	0 – 1500 – 5000 rpm	
741 / 743	Lon6	8589 / 8591	skip width 1 / 2	0 – 300 rpm	
75.	**Master-slave function**				
750	Lon6	8592	Slave setpoint	0 1 2 3	Master/slave off Speed RS485 Speed SBus Speed RS485 + SBus
751		8593	Scaling slave setpoint		1, 00
76.	**Manual operation**				
760	Lon6	8798	Lock RUN / STOP / RESET keys	oFF on	Off On
77.	**Energy-saving function**				
770	Lon6	8925	Energy-saving function	oFF on	Off On
8..	**Unit functions** (on FBG only parameter set 1)				
80.	**Setup**				
800		–	Quick menu	long Short	
801		–	DBG language		
802	Short	8594	Factory setting	No Hours ALL NEMA	No Standard Delivery state Delivery state NEMA
803		8595	Parameter lock	oFF on	Off On
804		8596	Reset statistics data	–	No action Error memory
805	Lon6	8660	Rated line voltage		50 – 500 V

No.	FBG	Index dec.	Name	Range / factory setting	
				Display	MOVITOOLS® MotionStudio
806		–	Copy DBG → MOVITRAC® B		Yes No
807		–	Copy MOVITRAC® B → DBG		Yes No
808		10204.3	24 V output voltage	Off On	Off On
809		10204.1	IPOS enable	–	Off On
81.	**Serial communication**				
810	tonb	8597	RS485 address	0 – 99	
811		8598	RS485 group address	100 – 199	
812		8599	RS485 Timeout interval	0 – 650 s	
819		8606	Fieldbus timeout interval	Fieldbus timeout interval display	
82.	**Brake operation 1 / 2**				
820 / 821		8607 / 8608	4-quadrant operation 1/2	oFF on	Off On
83.	**Error responses**				
830		8609	Response terminal "external error"	2 4 7	Immediate stop/malfunction Rapid stop / Malfunction (*Factory setting for P830*) Rapid stop / Warning (*Factory setting for P833 / P836*)
833	tonb	8612	Response timeout RS485		
836		8615	Response to SBus timeout		
84.	**Reset behavior**				
840		8617	Manual reset		Yes No
841	tonb	8618	Auto reset	Off On	Off On
842	tonb	8619	Restart time		1 – 3 – 30 s
85.	**Scaling actual speed value**				
850		8747	Scaling factor numerator	1 – 65535 (can be set with SHELL only)	
851		8748	Scaling factor denominator	1 – 65535 (can be set with SHELL only)	
852	tonb	8772 / 8773	User unit	Text	
853		9312	Scaled speed FBG	0 1	Speed Scaled speed

No.	FBG	Index dec.	Name	Range / factory setting	
				Display	MOVITOOLS® MotionStudio
86.	**Modulation 1 / 2**				
860 / 861	Lon6	8620 / 8621	PWM frequency 1 / 2	4 8 12 16	4 kHz 8 kHz 12 kHz 16 kHz
862 / 863		8751 / 8752	PWM fix 1 / 2	on oFF	On Off
87.	**Process data parameter setting**				
870	Lon6	8304	Setpoint description PO1	0 1 5 8 9 10 11 12 13	No function (factory setting *P872*) Setpoint speed (factory setting *P871*) Max. speed Ramp Control word 1 (*factory setting P870*) Control word 2 Setpoint speed % IPOS PO data PI controller setpoint %
871		8305	Setpoint description PO2		
872		8306	Setpoint description PO3		
873		8307	Actual value description PI1	0 1 2 3 6 7 8 9 10	No function Actual speed (*factory setting P874*) Output current (factory setting *P875*) Active current Status word 1 (*factory setting P873*) Status word 2 Actual speed % IPOS PI-DATA PI controller actual value %
874		8308	Actual value description PI2		
875		8309	Actual value description PI3		
876	Lon6	8622	PO data enable	No Yes	No Yes
88.	**Serial communication SBus**				
880	Lon6	8937	SBus protocol	0 / MOVILINK 1 / CANopen	
881		8600	SBus address	0 – 63	
882		8601	SBus group address	0 – 63	
883		8602	SBus timeout interval	0 – 650 s	
884	Lon6	8603	SBus baud rate	125 250 500 1000	125 kBd 250 kBd 500 kBd 1 Mbaud
886		8989	CANopen address	1 – 2 – 127	

6 Operation

6.1 Return codes (r-19 – r-38)

Return codes when entering / editing a unit parameter in the FBG11B:

No.	Designation	Meaning
18	Only read access	Parameter cannot be changed
19	Parameter lock activated	Parameters cannot be changed
20	Factory setting in progress	Parameters cannot be changed
23	Option card missing	The option card required for the function is missing.
27	Option card missing	The option card required for the function is missing.
28	Controller inhibit required	Controller inhibit required
29	Invalid value for parameter.	• Invalid value for parameter. • FGB manual operation selection invalid as PC is in active manual operation.
32	Enabled	You cannot perform this function in ENABLED status
34	Error in sequence	• Error while saving in FBG11B. • Startup not performed with FBG. Perform startup with MotionStudio or select a new motor.
38	FBG11B incorrect data set	Stored data set does not match the unit

6.2 Status displays

6.2.1 Basic unit / keypad FBG11B

The status displays on the unit are as follows:

State	Display (optionally with FBG11B key pad)	Basic unit status LED flash code	Unit status (high byte in status word 1)
"ENABLE"	Speed	Constant green light	4
"ENABLE" at current limit	Speed flashes	Rapid green flashing	
"CURRENT AT STAND-STILL"	dc	Slow green flashing	3
"NO ENABLE"	Stop	Constant yellow light	2
"FACTORY SETTING"	SEt	Rapid yellow flashing	8
"CONTROL.INHIBIT"	oFF	Rapid yellow flashing	1
"24 V operation"	24U flashing	Slow yellow flashing	0
"SAFE STOP"[1)]	U flashing or 24U flashing	Slow yellow flashing	17
FBG manual mode active or inverter stopped using STOP button.	FGB manual operation symbol or "stop" is flashing	Yellow on long, off briefly	
Timeout	Errors 43 / 47	Flashing green/yellow	
Copy	Error 97	Flashing red/yellow	
System error	Error 10 / 17 – 24 / 25 / 32 / 37 / 38 / 45 / 77 / 80 / 94	Constant red light	
Overvoltage / phase failure	Errors 4 / 6 / 7	Slow red flashing	
Overload	Errors 1 / 3 / 11 / 44 / 84	Rapid red flashing	
Monitoring	Errors 8 / 26 / 34 / 81 / 82	2 x red flashing	
Motor protection	Errors 31 / 84	3 x red flashing	

1) "U" flashing (status 17) if connected to supply system, "24U" flashing (status 0) if in backup mode.

- ⚠ **WARNING** Incorrect interpretation of display U = "Safe stop" active.

  Severe or fatal injuries.

  – The display U = "Safe stop" is not safety-related and must not be used as a safety function.

Cause for controller inhibit (OFF)

The controller inhibit (OFF) can be caused by the following conditions:

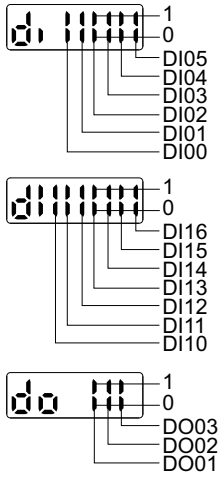
- Binary input terminal (DI00, DI02 – DI05) programmed to controller inhibit and activated.
- Controller inhibit due to PC manual mode via MOVITOOLS® MotionStudio.
- Temporary controller inhibit: Is triggered if a change of parameter *P100 setpoint source* would directly cause an enable signal. The temporary controller inhibit is removed once the enable signal is reset for the first time.
- Controller inhibit set via IPOS control word H484.

6.2.2 Status of binary inputs / outputs

The following parameters are available in the parameter menu as display parameters:

- *P039 Binary inputs of basic unit*
- *P048 Binary inputs option*
- *P059 binary outputs*

The status is displayed as binary. Every binary input or output has two segments vertically on top of one another of the 7-segment display assigned to it. The upper segment lights up when the binary input or output is set, and the lower segment lights up when the binary input or output is not set. The two 7-segment displays on the right indicate whether *P039* (di = binary inputs basic unit), *P048* (dI = binary inputs option), or *P059* (do = binary outputs) are output.



1761603083

If no FIO21B with binary inputs is available, the display will show `dI - - -`.

7 Service / List of Errors

7.1 Error list (F-00 – F113)

No.	Designation	Response	Possible cause	Measure
00	No error	–	–	–
01	Overcurrent	Immediate switch-off with inhibit.	• Short circuit at output	• Rectify the short circuit
			• Switching at the output	• Switching with inhibited output stage only
			• Motor too large	• Connect a smaller motor
			• Faulty output stage	• Consult SEW Service if the error cannot be reset
03	Ground fault	Immediate switch-off with inhibit.	• Ground fault in motor	• Replace motor
			• Ground fault in inverter	• Replace the MOVITRAC® B
			• Ground fault in the motor supply lead	• Eliminate ground fault
			• Overcurrent (see *F01*)	• See *F01*
04	Brake chopper	Immediate switch-off with inhibit.	• Too much regenerative power	• Extend deceleration ramps
			• Braking resistor circuit interrupted	• Check supply cable to the braking resistor
			• Short circuit in the braking resistor circuit	• Rectify the short circuit
			• Brake resistance too high	• Check technical data of braking resistor
			• Brake chopper defective	• Replace the MOVITRAC® B
			• Ground fault	• Eliminate ground fault
06	Mains phase failure	Immediate switch-off with inhibit (only with 3-phase inverter)	• Phase failure	• Check the line cable
			• Supply voltage too low	• Check the supply voltage
07	DC link overvoltage	Immediate switch-off with inhibit.	• DC link voltage too high	• Extend deceleration ramps • Check supply cable to the braking resistor • Check technical data of braking resistor
			• Ground fault	• Eliminate ground fault
08	Speed monitoring	Immediate switch-off with inhibit.	Current controller works at the set limit due to:	–
			• Mechanical overload	• Reduce load • Check current limitation • Extend deceleration ramps • Increase set deceleration time *P501*[1)]
			• Phase failure in supply system	• Check line phases
			• Phase failure in motor	• Check motor cable and motor
			• Maximum speed for VFC operating modes exceeded	• Reduce maximum speed
09	Startup	Immediate switch-off with inhibit.	• Inverter not started yet	• Start up the inverter
			• Unknown motor selected	• Select another motor
10	IPOS-ILLOP	Stop with inhibit With IPOS only	• Wrong command during program execution	• Check the program
			• Incorrect conditions during program execution.	• Check program run
			• Function does not exist / is not implemented in the inverter	• Use another function

No.	Designation	Response	Possible cause	Measure
11	Overtemperature	Stop with inhibit	• Thermal overload of inverter	• Reduce load and/or ensure adequate cooling • If a braking resistor is integrated in the heat sink: Install braking resistor externally
17 – 24	System malfunction	Immediate switch-off with inhibit.	• Inverter electronics is faulty, possibly due to EMC influence	• Check grounding and shielding and improve, if necessary • Contact SEW Service for advice if this error reoccurs.
25	EEPROM	Stop with inhibit	• Error while accessing EEPROM	• Restore factory settings, perform reset and reset parameters. • Consult SEW Service if the error reoccurs
26	External terminal	Programmable	• Read in external error signal via programmable input.	• Eliminate respective cause; reprogram terminal if necessary
31	TF/TH sensor tripped	Stop without inhibit • "Ready" signal is maintained	• Motor too hot, TF sensor has tripped	• Let motor cool off and reset error
			• TF sensor of motor not connected or connected incorrectly • Connection of MOVITRAC® B and TF on motor interrupted	• Check connections / links between MOVITRAC® B and TF
32	IPOS index overflow	Stop with inhibit	• Programming principles violated leading to internal stack overflow	• Check user program and correct it
34	Ramp timeout	Immediate switch-off with inhibit.	• Set ramp time exceeded.	• Extend the ramp time
			• If you remove the inhibit and the drive exceeds the stop ramp time t13 by a certain time, the inverter will signal *F34*	• Extend the stop ramp time
35	Ex-e protection operating mode	Immediate switch-off with inhibit.	• Wrong operating mode selected	Permitted modes: • V/f, VFC, VFC hoist Incorrect modes: • Flying start function • DC braking • Group operation
			• Non-permitted parameter set	• Use parameter set 1 only
			• No Ex-e motor started up	• Start up Ex-e motor
			• Incorrect parameterization of the frequency points	• Frequency A < frequency B • Frequency B < frequency C
			• Incorrect parameterization of the current limits	• Current limit A < current limit B • Current limit B < current limit C
36	Option missing	Immediate switch-off with inhibit.	• Type of option card not allowed	• Use correct option card
			• Setpoint source, control signal source or operating mode not permitted for this option card	• Set correct setpoint source. • Set correct control signal source . • Set the correct operating mode. • Check parameters *P120* and *P121*
			• Required option missing	• Check the following parameters: • *P121* for FBG11B • *P120* and *P642* for FIO12B
			• Front module FIO21B not supplied	• Set *P808* to "On" or supply basic unit with external 24 V
37	System watchdog	Immediate switch-off with inhibit.	• Fault in system software sequence	• Check grounding and shielding and improve, if necessary • Contact SEW Service for advice if this error reoccurs.

No.	Designation	Response	Possible cause	Measure
38	System software	Immediate switch-off with inhibit.	• System malfunction	• Check grounding and shielding and improve, if necessary • Contact SEW Service for advice if this error reoccurs.
43	RS485 timeout	Stop without locking[2)]	• Connection between inverter and PC interrupted.	• Check connection between inverter and PC
			• Communication to FSE24B interrupted	• Check voltage supply • Check *P808*
44	Unit utilization	Immediate switch-off with inhibit.	• Unit utilization (I × t value) exceeded	• Decrease power output • Extend ramps • If neither is possible: Use a larger inverter
45	Initialization	Immediate switch-off with inhibit.	• Error during initialization	• Contact SEW Service.
47	System bus 1 timeout	Stop without inhibit[2)]	• Error during communication via system bus	• Check system bus connection • Check P808 • Check voltage supply of FSE24B • Check EtherCAT communication with connected FSE24B
77	IPOS control word	Stop with inhibit	• System malfunction	• Contact SEW Service.
80	RAM test	Immediate disconnection	• Internal unit error, RAM defective	• Contact SEW Service.
81	Start condition	Immediate switch-off with inhibit.	**Only in "VFC hoist" operating mode:** The motor could not be supplied with the correct amount of current during the pre-magnetizing time:	
			• Rated motor power too small in relation to rated inverter power	• Check connection between inverter and motor • Check startup data and perform new startup, if necessary.
			• Motor cable cross section too small	• Check cross section of motor cable and increase if necessary.
82	Open output	Immediate switch-off with inhibit.	**Only in "VFC hoist" operating mode:**	
			• 2 or all output phases interrupted	• Check connection between inverter and motor
			• Rated motor power too small in relation to rated inverter power	• Check startup data and perform new startup, if necessary.
84	Motor protection	Stop with inhibit	• Motor utilization too high.	• Check *P345* / *P346* I_N-UL monitoring • Reduce load • Extend ramps • Longer rest periods
94	EEPROM checksum	Immediate switch-off with inhibit.	• Defective EEPROM	• Contact SEW Service.
97	Copy error	Immediate switch-off with inhibit.	• Parameter module is removed during copying process • Switching off/on during copying process	Prior to acknowledgement: • Load factory setting or complete data set from parameter module
98	CRC error flash	Immediate disconnection	• Internal unit error, flash memory defective.	• Send unit in for repair
100	Vibration/warning	Display error	• Vibration sensor warning (see "DUV10A diagnostics unit" operating instructions)	• Determine cause for vibration, operation possible until *F101*

No.	Designation	Response	Possible cause	Measure
101	Vibration error	Rapid stop	• Vibration sensor signals error	• SEW-EURODRIVE recommends that you remedy the cause of the vibrations immediately
102	Oil aging/warning	Display error	• Oil aging sensor warns	• Schedule oil change
103	Oil aging/error	Display error	• Oil aging sensor signals error	• SEW-EURODRIVE recommends that you change the gear unit oil immediately.
104	Oil aging/overtemperature	Display error	• Oil aging sensor signals overtemperature	• Let oil cool down • Check if the gear unit cools properly
105	Oil aging / ready signal	Display error	• Oil aging sensor is not ready for operation	• Check voltage supply of oil aging sensor • Check and, if necessary, replace the oil aging sensor
106	Brake wear	Display error	• Brake lining worn	• Replace brake lining (see "Motors" operating instructions)
110	Ex-e protection	Emergency stop	• Duration of operation below 5 Hz exceeded	• Check configuration • Shorten duration of operation below 5 Hz
111	System bus (SBus) error	This error number signals the EtherCAT or fieldbus master that the communication between FSE24B and MOVITRAC® B is interrupted. MOVITRAC® B would detect error 47.		• Check FSE24B plug connection
113	Analog input open circuit	Programmable	• AI1 analog input open circuit	• Check wiring
116	Error application module *Suberror:* 14: Encoder error 29: Limit switch contacted 42: Lag error 78: Software limit switch reached			

1) Change parameters *P500* / *P502* and *P501* / *P503* to set the speed monitoring. The sagging of hoists cannot be avoided safely when monitoring is deactivated or the delay time is set too long.

2) No reset required, error message disappears after communication is reestablished.

7.2 SEW electronics service

7.2.1 Hotline

Call the Drive Service Hotline to talk to an SEW-EURODRIVE service specialist on 365 days a year, 24 hours a day.

Simply dial the prefix **01805** and then enter the key combination **SEWHELP**. Or simply dial **01805 739 4357**.

7.2.2 Sending a unit in for repair

Consult **SEW Electronics Service if you are unable to rectify the error**.

Please always specify the unit status code number when you contact the SEW electronics service so that our service personnel can assist you more effectively.

Provide the following information when sending the unit in for repair:

- Serial number (see nameplate)
- Type designation
- Short description of application (application, control via terminals or serial)
- Connected motor (motor voltage, star or delta connection)
- Nature of the fault
- Accompanying circumstances
- Your own presumptions as to what has happened
- Unusual events preceding the problem

Index

C

Content of this publication 8

D

Documentation, applicable 8

E

Electronics service 38
Embedded safety notes 5
Error
- F04 Brake chopper 34
- F06 Mains phase failure 34
- F07 DC link overvoltage 34
- F08 Speed monitoring 34
- F09 startup 34
- F10 IPOS-ILLOP 34
- F100 vibration/warning 36
- F101 vibration/error 37
- F102 oil ageing/warning 37
- F103 oil ageing/error 37
- F104 oil ageing/overtemperature 37
- F105 oil ageing/ready signal 37
- F106 brake wear 37
- F11 Overtemperature 35
- F110 error Ex-e protection 37
- F111 System bus (SBus) error 37
- F116 Timeout MOVI-PLC 37
- F17 ... F24 system error 35
- F25 EEPROM 35
- F26 External terminal 35
- F31 TF/TH sensor tripped 35
- F32 IPOS index overflow 35
- F34 Ramp timeout 35
- F35 operating mode Ex-e protection 35
- F36 Option missing 35
- F37 System Watchdog 35
- F38 System software 36
- F43 RS485 timeout 36
- F44 Unit utilization 36
- F45 Initialization 36
- F47 System bus 1 timeout 36
- F77 IPOS control word 36
- F80 RAM test 36
- F81 Start condition 36
- F82 Open output 36
- F84 motor protection 36
- F97 Copy error 36
- F98 CRC Error Flash 36

Error list 34

F
Fault
F01 Overcurrent....34
F03 Ground fault....34
F113 Wire breakage analog input....37
F94 EEPROM checksum....36
FBG11B keypad
Startup....17
Status of binary inputs/outputs....33

G
Group drive....19

K
Keypad FBG11B
Startup....17
Status displays....32

L
LED, flash codes....32

M
Manual operation
FBG11B keypad....16
Manual speed control module....16
Maximum speed....16
Minimum speed....16
Multi-motor drive....19

N
Nameplate....12
Notes
Designation in the documentation....4

O
Operating mode VFC....18
Operating mode V/f....18
Other applicable publications....8

P
Parameter list....20
Publications, applicable....8

R
Repair service....38
Return code
19 Parameter lock active....31
20 Factory setting in progress....31
23 Option card missing....31
27 Option card missing....31
28 Controller inhibit required....31
29 Invalid value for parameter....31
32 Enable....31
34 Error during execution....31
38 FBG11B incorrect data set....31
Return codes....31

S
Safety notes....6
Designation in the documentation....4
Structure of the embedded safety notes....5
Structure of the section-related safety notes....4
Section-related safety notes....4
Signal words in the safety notes....4
Speed
Manual setting....16
Maximum....16
Minimum....16
Speed control module
Manual....16
Startup
Brief description....15
FBG11B keypad....17
Status displays
Basic unit....32
Keypad....32
LED, flash codes....32
Status of binary inputs/outputs....33

T
Type designation....11

U
Unit status....11, 12
Unit status codes....32

V
VFC....18
V/f....18

W
Wiring diagram....14

SEW-EURODRIVE
Driving the world

SEW-EURODRIVE GmbH & Co KG
P.O. Box 3023
D-76642 Bruchsal/Germany
Phone +49 7251 75-0
Fax +49 7251 75-1970
sew@sew-eurodrive.com

➞ **www.sew-eurodrive.com**